

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	312	546/4.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 19:17
L2	128	257/136.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 19:17
L3	1	257/136.ccls. and ruthenium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 19:17
L4	34	l1 and ruthenium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 19:17
S1	68	136/263.ccls. and absorbance	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/10 18:53
S2	216	136/263.ccls. and ruthenium	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 20:33
S3	53	136/263.ccls. and (ruthenium near dye)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 20:40
S4	3	136/263.ccls. and tris-tetrabutylammonium	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 20:41
S5	3	136/263.ccls. and (tris near tetrabutylammonium)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:41
S6	70	136/263.ccls. and (tetrabutylammonium)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/11 11:03
S7	87	wariishi.in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:48
S8	294	"4927721" "4684537" "5084365" "5350644" "5463057" "5525440"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:50
S9	235	("4927721" "4684537" "5084365" "5350644" "5463057" "5525440") and ruthenium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:50
S10	196	S9 and (solar photovoltaic)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:51
S11	0	S10 and tris-tetrabutylammonium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:52

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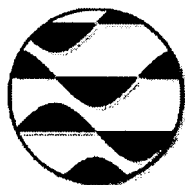
S12	15	tris-tetrabutylammonium	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:41
S13	2	"Ruthenium 620-1H3TBA"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:10
S14	0	Solaronix.as.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 20:58
S15	15	tris-tetrabutylammonium	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 20:59
S16	7944	(tris-tetrabutylammonium (black near dye))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 20:59
S17	7	136/263.ccls. and (black near dye)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 21:02
S18	1	"5885368".PN.	USPAT; USOCR	OR	OFF	2007/06/07 21:01
S19	9	136/263.ccls. and ((black orange red green blue) near dye)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/07 21:03
S20	2	136/263.ccls. and ((black and orange and red and green and blue) near dye)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 21:03
S21	86	(fukui-atsushi han-liyuan).in.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/07 21:07
S22	68	136/263.ccls. and absorbance	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 09:21
S23	15	136/263.ccls. and TBA	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 09:15
S27	3232574	tris(isothiocyanato)-ruthenium(II)-2,2':6',2"-terp- yridine-4,4', 4"-tricarboxylic acid, tris-tetrabutylammonium salt	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:10

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S28	0	"tris(isothiocyanato)-ruthenium(II)-2,2':6',2"-terp- yridine-4,4', 4"-tricarboxylic acid, tris-tetrabutylammonium salt"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:16
S30	9503	ruthenium and dye	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:45
S31	885	S30 and (solar photovoltaic)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 10:48
S32	30	S31 and TBA	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 11:00
S33	6	("4927721" "4684537" "5084365" "5350644" "5463057" "5525440").pn.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 11:18
S37	2648	(ITO "indium-tin oxide") same epoxy	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 19:01
S44	1	"5650019".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/08 19:44
S48	1	"20020036298".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/09 21:07
S49	1	136/263.ccls. and (absorbance near semiconductor)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/06/09 21:09
S50	1	136/263.ccls. and (absorbance near semiconductor)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/09 21:09
S51	29	136/263.ccls. and chromophore	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 18:57
S52	15	136/263.ccls. and ruthenium and TBA	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 19:29
S53	214	dye with (wavelength near shift)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 19:34
S54	26	S53 and (solar photovoltaic)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:25
S55	1	((Ruthenium Ru) near ("535" 535-bisTBA "620")) with ((heat light chemical) near treatment)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:50

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S56	1	(ruthenium near dye) with ((heat light chemical) near treatment)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:28
S57	86	136/263.ccls. and ((heat light chemical) near treatment)	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:28
S58	44	((Ruthenium Ru) near ("535" 535-bisTBA "620"))	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:57
S59	269320	Ruthenium "620"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/10 20:57
S60	10	"Ruthenium 620" "Ru 620"	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/11 10:25
S62	46399	photodiode	USPAT; USOCR	OR	ON	2007/06/11 10:26
S68	80	136/263.ccls. and ((absorbance absorption) near (peak maximum))	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/11 11:54
S70	4	("5885368" "20020040728" WO2004025748).pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/11 14:51
S72	264	andriessen.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/11 14:51
S73	24	andriessen.in. and (ruthenium Ru)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/11 14:52
S74	4	andriessen.in. and "Ruthenium 620"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/11 14:53
S75	63	andriessen.in.	EPO	OR	ON	2007/06/11 14:53



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2 Dye Solar Cells

3 Transparent conductive layers

4 Electrochromic Elements

5 Ultra low input voltage converter

6 Engineering & Services

7 New product

Ruthenium 620-1H3TBA

Pricing in Swiss Francs (CHF)

Product designation:

Ruthenium 620-1H3TBA

This product is identical to the old Ruthenium 620 or N-749, also known as "Black-Dye"

Chemical Name:

tris(isothiocyanato)-ruthenium(II)-2,2':6',2''-terpyridine-4,4',4''-tricarboxylic acid, tris-tertrabutylammonium salt

Short Formula:

$[\text{RuL}(\text{NCS})_3] : 3\text{TBA}$ L = 2,2'-bipyridyl-4,4'-dicarboxylic acid
TBA = tetrabutylammonium

Molecular Weight:

$\text{C}_{69}\text{H}_{117}\text{O}_6\text{N}_9\text{S}_3\text{Ru}$ 1364.7 g/mol

CAS Number

N/A

Aspect:

Black to dark greenish powde

Properties:

Ruthenium 620-1H3TBA sensitizes efficiently wide band-gap oxide semiconductors, like titanium oxide, up to a wavelength of 920 nm.

spectrum in ethanol

Caution: Substance not fully tested

MSDS

Quantity	Price net in CHF
100 mg	540.00
500 mg	2'430.00
1000 mg	4'350.00
2000 mg	7'650.00
5000 mg	17'550.00

Shipping costs to be added

Delivery time: three weeks after reception of purchase order, if not in stock

Please consult us for larger quantity quotations, or repetitive orders of **Ruthenium 535-bisTBA** sensitizer

Ruthenium 470
Ruthenium 505
Ruthenium 520 - DN
Ruthenium 535
Ruthenium 535 - bisTBA
Ruthenium 620 -1H3TBA

[Technology]

1 Operating principles of the Dye Solar Cells

2 Operation of the Electrochromic Elements

3 Publications

4 Links

Solaronix SA

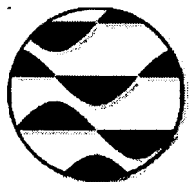
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SOLARONIX

Material Safety Data Sheet (MSDS)

according to E.U. Directives 91/155/EWG

Revision: 01.02.2000

Index:

Product Name: **Ruthenium 620-1HTBA**

1. Identification and Company Name

1.1. Product Name: **Ruthenium 620-1H3TBA**

1.2. Address / Phone No: Solaronix SA
Rue de l'Ouriette 129
CH-1170 Aubonne /Switzerland
Tel +41 21 821 22 80
Fax + 41 21 821 22 89
e-mail : toby@solaronix.com
internet : <http://www.solaronix.com>

1.3. Emergency Phone No: +41 01 251 51 51
Swiss Toxicological Information Center

2. Product Description

Chemical characterization
of composition: Polypyridyl ruthenium(II) complex

Contains: tris(isothiocyanato) ruthenium(II)-2,2':6',2''-tertpyridine-4,4',4''tricarboxylic acid, tetrabutylammonium as counter ions

Content: 99 % vol.

CAS Reg. No: [N/A]

EU-Label: S 22-24/25

3. Summary Irritant.
Experimental substance, not fully tested.

4. First Aid Measures

4.1. Eye Contact: Rinse with plenty of water. Obtain medical attention.

4.2. Skin Contact: Remove contaminated clothing. Wash skin with water.

4.3. Inhalation:

4.4. Ingestion: Unlikely to be hazardous when swallowed.

4.5.	Symptomes:	-
5.	Fire and Explosion	
5.1.	Extinguishing Media:	Water
	unsuited:	Not known
5.2.	Special Indications in Case of Fire:	Not known
6.	Spillage / Accidental Release	
6.1.	After Spillage / Leakage:	Large quantities: wash-up spillage area with water Small quantities: wash-up spillage area with water
6.2.	Cleaning of Equipment:	Clean with water
7.	Handling and Storage	
7.1.	Handling:	Avoid contact with skin and eyes Avoid breathing dust
7.2.	Storage:	At room temperature
8.	Personal Protection	
8.1.	Working Hygiene:	-
8.2.	Personal Equipment:	Gloves: Yes Eye Protection: Yes Body Protection: None Respirators: None
9.	Physical and Chemical Data	
9.1.	Form:	Solid
9.2.	Aspect:	Dark green powder
9.3.	Odor:	None
9.4.	Phase Change:	Decomposed at ~ 250 °C
9.5.	Flash Point °C:	Not applicable
9.6.	Ignition Temperature °C:	Not applicable
9.7.	Explosion Hazard:	Not applicable
9.8.	Density Kg/dm ³ :	Not available
9.9.	Vapor Pressure:	Not applicable

- | | | |
|-------|----------------------------------------------|------------------------------|
| 9.10. | Viscosity: | Not applicable |
| 9.11. | pH Value: | Not applicable |
| 9.12. | Solubility in Water: | Completely soluble at pH > 9 |
| 9.13. | Separation Coefficient
n-Octanol / Water: | Not available |

10. Stability and Reactivity

- | | | |
|-------|--------------------------------------|---------------|
| 10.1. | Conditions to Avoid: | None known |
| 10.2. | Incompatible Materials: | None Known |
| | Hazardous Decomposition
Products: | Not available |
| | Hazardous Reactions: | None known |

- | | | | |
|-----|---------------------------|------------------|---------------|
| 11. | Toxicological Data | LD50 Acute Oral: | Not available |
| | | Skin Irritation: | Weak |
| | | Eye Irritation: | Irritating |

12. Environmental Data Components Data:

Fish Toxicity LC50: Not available

Effect on Effluent Treatment

WGK : 0 (self classification)

13. Waste Disposal

Disposal should be in accordance with
local, state or national legislation.

Neutralization: dilute with water

Disposal of Empty Containers: wash with alkaline water

14. Transport

Regulations	Class UN No.
ADR/RID :	Not restricted
ICAO/IATA-DGR :	Not restricted
IMDG-Code :	Not restricted

Further Informations: Not classified as hazardous for transport

15. Regulatory Information

Indication According to
EU-Rules:

S22	Do not breath dust
S24	Avoid contact with skin
S25	Avoid contact with eyes

16. Other Informations

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